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Discussion

Tuesday, October 6, 2020 2:15 PM (15 minutes)

A overview presentation will be followed by community discussion on potential energy reach of plasma based colliders at scales to and beyond 10 TeV. Comments from the community, both based on LOI's discssed at the AF6 September worskhop (https://indico.fnal.gov/event/45651/) and new comments, are encouraged.

This session will be in addition to a more general session, A10 Physics limits of Ultimate Beams (colliders: e+/e-, mu/mu, p/p, p drivers, etc) which will address overall considerations. As such, A26 will be aimed at specific plasma based collider issues.

Energy reach considerations include scattering, hosing, radiation, focusing and interaction point physics. Efficiency considerations include structure efficiency, interaction point geometry to maximize interaction, and energy recovery. The extent to which plasma based concepts (both established and new) may have properties that either improve on conventional machines or present limits will be discussed. The goal is outline the status of issues that have been analyzed and discuss needs for further research that should be addressed to move forward collider designs based on these concepts.

Session Classification: 182. Energy and power limits for plasma accelerators